

Construction 4.0: The Future of the Construction Industry in South Africa

Authors : Temidayo. O. Osunsanmi, Clinton Aigbavboa, Ayodeji Oke

Abstract : The construction industry is a renowned latecomer to the efficiency offered by the adoption of information technology. Whereas, the banking, manufacturing, retailing industries have keyed into the future by using digitization and information technology as a new approach for ensuring competitive gain and efficiency. The construction industry has yet to fully realize similar benefits because the adoption of ICT is still at the infancy stage with a major concentration on the use of software. Thus, this study evaluates the awareness and readiness of construction professionals towards embracing a full digitalization of the construction industry using construction 4.0. The term 'construction 4.0' was coined from the industry 4.0 concept which is regarded as the fourth industrial revolution that originated from Germany. A questionnaire was utilized for sourcing data distributed to practicing construction professionals through a convenience sampling method. Using SPSS v24, the hypotheses posed were tested with the Mann Whitney test. The result revealed that there are no differences between the consulting and contracting organizations on the readiness for adopting construction 4.0 concepts in the construction industry. Using factor analysis, the study discovers that adopting construction 4.0 will improve the performance of the construction industry regarding cost and time savings and also create sustainable buildings. In conclusion, the study determined that construction professionals have a low awareness towards construction 4.0 concepts. The study recommends an increase in awareness of construction 4.0 concepts through seminars, workshops and training, while construction professionals should take hold of the benefits of adopting construction 4.0 concepts. The study contributes to the roadmap for the implementation of construction industry 4.0 concepts in the South African construction industry.

Keywords : building information technology, Construction 4.0, Industry 4.0, smart site

Conference Title : ICCEABME 2018 : International Conference on Civil Engineering, Architecture, Building Materials and Environment

Conference Location : Paris, France

Conference Dates : March 15-16, 2018